

LOWER FLUENCE BOUNDARY OBLIQUE LASER SHOCK PEENING

ABSTRACT

A laser shock peening method including laser shock peening a first area with at least one high fluence normal laser beam and laser shock peening a border area between the first area and a non-laser shock peened area of the article with at least one first low fluence oblique laser beam. The border area may be laser shock peened with two or more low fluence oblique laser beams. The second low fluence oblique laser beam and others have a lower fluence than the first low fluence oblique laser beam. The border area may be laser shock peened with progressively lower fluence oblique laser beams starting with the one first fluence oblique laser beam wherein the progressively lower fluence oblique laser beams are in order of greatest fluence to least fluence in a direction outwardly from the first area through the border area to the non-laser shock peened area.